

## SaaS for Customer Support with RAG (Retrieval-Augmented Generation)

# Overview

Our SaaS platform provides real-time financial health analytics, cash flow predictions, automated tax estimations, and an advanced customer support system powered by Retrieval-Augmented Generation (RAG). This AI-driven chatbot processes provided PDFs and answers user queries based on their content, enhancing customer support efficiency.

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## Key Features

### 1. Financial Health Analytics

- Integration with bank accounts, invoices, and expenses
- Dashboard visualization of financial insights
- Automated balance tracking and cash flow monitoring

### 2. Cash Flow Prediction

- Uses historical financial data to forecast future cash flows
- JavaScript-based backend routes and frontend visualization
- Chart-based analytics for better financial planning

### 3. Automated Tax Estimation

- Fetches transactions and categorizes them for tax purposes
- Calculates estimated tax liabilities based on user financial data
- Backend routes for tax calculations and frontend integration

## 4. Customer Support with RAG

- AI-powered chatbot for answering customer queries
- Ingests PDFs containing support documentation
- Uses retrieval-augmented generation (RAG) for precise responses

## 5. Unique Sandbox User Accounts

- Dummy data for account balances and transactions
- Each user has unique accounts and balances
- MongoDB with Mongoose for storing account details

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## Technical Stack

### Frontend:

- React.js with Tailwind CSS
- Interactive charts for financial visualization
- Secure authentication and dashboard UI

## Backend:

- Node.js with Express.js
- MongoDB with Mongoose for data storage
- API endpoints for financial data retrieval and tax estimation

## AI/ML Component:

- OpenAI's Retrieval-Augmented Generation (RAG) for chatbot
- NLP models for processing PDF documents
- Fast and accurate responses to customer inquiries

## Infrastructure & Security:

- Secure API authentication
  - Role-based access control (RBAC)
  - Data encryption for financial and user data
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## API Routes

### Authentication & Users

- POST /api/register – Register a new user
- POST /api/login – User authentication
- GET /api/user?email=<email> – Fetch user details

## Bank Accounts & Transactions

- POST /api/generate\_accounts – Generate dummy accounts
- POST /api/accounts – Fetch user bank accounts
- GET /api/transactions?accountId=<id> – Retrieve transactions

## Cash Flow & Tax Estimation

- POST /api/cashflow/predict – Predict future cash flow
- POST /api/tax/estimate – Estimate tax liability

## Customer Support RAG

- POST /api/upload\_pdf – Upload support document
- GET /api/query?question=<query> – Fetch AI-generated answer

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## Deployment & Scalability

- Hosted on AWS/GCP
  - Load balancing and auto-scaling for high availability
  - CI/CD pipeline for continuous updates
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## Future Roadmap

- Multi-language support for AI chatbot
- Integration with external accounting tools
- Advanced predictive analytics for financial planning

This document provides a comprehensive overview of the SaaS platform, including its architecture, key features, and API endpoints.